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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,720	12/11/2003	Cameron J. Dasch	GP-303842	9736

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EXAMINER

CHAPMAN JR, JOHN E

ART UNIT PAPER NUMBER

2856

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,720

Applicant(s)

DASCH, CAMERON J.

Examiner

John E. Chapman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-11, 13-15, 17 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 5 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-4, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Wild.

Wild discloses an ultrasonic inspection assembly comprising an ultrasonic transducer 45 mounted on a ring gear 26, and a drive mechanism 27 for rotating the ring gear 26 relative to the support structure 11. The ring gear 26 together with downwardly depending skirt 28 and shaft 43 comprise a platform upon which the transducer 45 is mounted and thereby comprises a "stage."

Regarding claim 3, the media comprises water (col. 3, lines 10-11).

3. Claims 10, 11, 13, 15, 17 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wild.

Regarding claims 10 and 11, the only difference between the claimed invention and the prior art consists in the material selected for the seal 21 of Wild. Wild teaches forming the seal member 21 of a material, which permits transmission without signal deterioration, and it is well known in the art to use a compliant polymeric material to transmit ultrasonic beams without signal deterioration. Accordingly, merely to use a compliant polymeric material for the seal 21 of Wild would have been obvious to one having ordinary skill in the art.

Regarding claim 13, Wild discloses a ring gear 26b on stage 26 and an indexing drive 27a and pinion 27b mounted on the support structure 11. The only difference between the claimed

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invention and the prior art consists in providing the ring gear 26b on the support structure 11 and mounting the indexing drive 27a and pinion 27b on the stage 26, which difference consists in a reversal of elements for achieving the same purpose, namely, rotating the stage 26. The reversal of components in a prior art reference, where there is no disclosed significance to such reversal, is generally recognized as a design consideration within the skill of the art. *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955); *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Regarding claim 15, the only difference between the claimed invention and the prior art consists in the length of the support structure 11 of Wild. Wild does not specify a length of the support structure 11. A change in the size of a prior art device is generally recognized as a design consideration within the skill of the art. See *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Accordingly, merely to select a length of 25 mm for the support structure 11 of Wild would have been obvious to one having ordinary skill in the art.

Regarding claim 17, the only difference between the claimed invention and the prior art consists in the positioning of the ultrasonic transducer 45 adjacent the proximal end 12 of the support structure 11, rather than in the middle of the support structure. It is clear that the distance between the ultrasonic transducer 45 and the proximal end 12 of the support structure serves to accommodate the drive mechanism 17, and it would have been obvious to minimize the drive mechanism 17, and thereby the distance between the distance between the ultrasonic transducer 45 and the proximal end 12, in order to provide a compact unit. A mere change in the shape of a prior art device is generally recognized as a design consideration within the skill of the art. See *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

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4. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wild in view of Kossoff et al.

Regarding claim 6, it is well known in the art to position a transducer at a required distance so as to provide optimal resolution, as taught by Kossoff et al. Note col. 4, lines 3-6, and col. 4, lines 27-32, of Kossoff et al. Accordingly, merely to position the transducer of Wild at a required distance so as to provide optimal resolution would have been obvious to one having ordinary skill in the art.

Regarding claim 14, Wild discloses a linear array of transducers and means for simultaneous energization of the transducers (col. 4, lines 67). Wild does not specify a phased array. Nevertheless, it is well known in the art to provide a linear phased array in order to provide a sector scan, as taught by Kossoff et al., and it would have been obvious to provide a linear phased array in the apparatus of Wild in order to provide a sector scan along the diametric path of the transducer.

5. Claims 1-3, 6, 8 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kossoff et al.

Kossoff et al. discloses an ultrasonic inspection assembly comprising an ultrasonic transducer 1 mounted on a stage 3, and a drive mechanism for rotating the stage 3 relative to the support structure 2. The stage 3 is "adjacent to" the proximal end of support structure 2 in that there is no intermediate structure between the stage and proximal end.

Regarding claim 6, the apparatus of Kossoff et al. provides optimal resolution, i.e., an optimal shape of an ultrasonic beam.

6. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kossoff et al.

Regarding claim 7, Kossoff et al. does not disclose a seal to prevent fluid from leaking from the proximal end (i.e., bottom) of the support structure 2. Nevertheless, it would have been obvious to provide a seal in order to maintain a coupling fluid with the target 6.

Regarding claim 15, a change in the size of a prior art device is generally recognized as a design consideration within the skill of the art. See *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Accordingly, merely to select a length of 25 mm for the support structure 2 of Kossoff et al. would have been obvious to one having ordinary skill in the art.

7. Claims 5 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Applicant's arguments filed April 11, 2005 have been fully considered but they are not persuasive. Applicant argues that the transducer element of Wild does not rotate. However, such argument is more specific than the invention claimed, since the claims do not recite a transducer element that rotates. Rather the claims recite a stage or support structure that rotates relative to the other. Furthermore, the transducer element 45 of Wild does rotate 180° when the device is indexed through 180°. Applicant argues that the ring gear 26 in Wild is not a support structure or a stage. Applicant does not provide any explanation as to why the ring gear 26 is not

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a support structure or a stage. During patent examination, the pending claims are to be given the broadest reasonable interpretation consistent with the specification. *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Prater*, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969). The ring gear 26 together with downwardly depending skirt 28 and shaft 43 comprise a platform upon which the transducer 45 is mounted and thereby comprises a “stage.” Applicant further argues that Wild does not disclose or suggest a support structure that has a proximal end adjacent to and coupled to such a stage. However, the support structure 11 has a proximal end located above a terminal end in Fig. 2, with the ring gear 26 coupled to the proximal end.

Applicant argues that Kossoff does not disclose a transducer mounted on a stage that is adjacent to a proximal end of a support structure, since the ultrasonic transducer is near neither end of the storage housing. However, “near” is a relative term and the stage 3 may be in the middle and still be near, i.e. adjacent to, both ends. Rather, the term “adjacent” indicates the absence of an intermediate structure between the stage 3 and the proximal end of the support structure 2, and accordingly the stage 3 is “adjacent to” the proximal end of support structure 2 in that there is no intermediate structure between the stage and proximal end.

Applicant argues that the Wild reference does not disclose or suggest a compliant polymeric material diaphragm, as recited in claim 10, and relates to ultrasonic imaging of a soft body part, rather than a small resistance weld spot nugget, which is potentially abrasive or sharp. However, claim 10 is not directed to ultrasonic imaging of a small resistance weld spot nugget. Accordingly, applicant’s argument is more specific than the invention claimed.

Applicant argues that there is no suggestion as to a support structure having a length of less than about 25 mm, as recited in claim 15, and that a working distance of 25 mm would equate to a maximum target thickness of at the most 12.5 mm, which would render both Wild and Kossoff inoperable for their intended use. However, according to the applicant, the working distance needs to be at least twice the maximum thickness of the object to be inspected in order to allow back wall reflections. See paragraph 28. In the intended use of the devices of Wild and Kossoff, there is no back wall reflection. Accordingly, it would render the devices of Wild and Kossoff inoperable for their intended use. Furthermore, to the extent that a working distance of 25 mm would equate to a maximum target thickness of at the most 12.5 mm, applicant's argument is more specific than the invention claimed, since the claims do not recite a target having a maximum thickness of at the most 12.5 mm.

Applicant argues that Kossoff moves the transducer in a "Z" direction to provide optimal focusing to a target and has no disclosure or suggestion to design an interior space of a support structure to optimize the shape of an ultrasonic beam emitted from a transducer. However, if the transducer is positioned to provide optimal focusing to a target, then the support structure necessarily is dimensioned so as to optimize focusing to the target.

Applicant argues that neither Wild nor Kossoff disclose a high frequency, linear phased array ultrasonic transducer, that has particular suitability for scanning resistance spot welds, as recited in claim 14. However, Kossoff discloses a linear array structure in Fig. 2(b). Particular suitability for scanning resistance spot welds is not given any weight, since it is more specific than the invention claimed. Applicant further argues that Wild discloses an apparatus that translates a single transducer in a diametric straight line and one would not be motivated to

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provide a linear phased array in such a device. But this is precisely what Kossoff teaches in column 4, lines 33-44.

Applicant argues that Kossoff teaches away from providing a seal between the target and coupling fluid and therefore Claim 7 is non-obvious in light of Kossoff. However, claim 7 does not recite a seal between the target and coupling fluid. Accordingly, applicant's argument is more specific than the invention claimed.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John E. Chapman whose telephone number is (571) 272-2191. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron

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Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John E Chapman
Primary Examiner
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